

II. Listing of Claims

Claim 1 (Currently Amended): A brace with an integrated lumbar support system, comprising:

a belt adapted to be positioned about a user's lower torso, the belt comprising a tube at least partially integrated within the belt;

a lumbar pad coupled to the belt, the lumbar pad adapted to be positioned proximate the user's lumbar region and to be inflated to provide lumbar support to the user;

a backplate positioned proximate the lumbar pad, the backplate being pivotally coupled to the belt to allow rotation of the belt about the backplate; and

a pump coupled to the belt, the pump adapted to provide air to the lumbar pad through the tube at least partially integrated within the belt to inflate the lumbar pad.

Claim 2 (Original): The brace of Claim 1, wherein:

the belt comprises a rigid portion and a resilient portion each extending along at least a portion of a length of the belt; and

at least a portion of the tube is secured between rigid portion and the resilient portion along the at least a portion of the length of the belt.

Claim 3 (Original): The brace of Claim 1, wherein the tube comprises:

a coupling between a first tube portion and a second tube portion;

the first tube portion coupled between the pump and the coupling, the first tube portion integrated within the belt along substantially an entire length of the first tube portion between the pump and the coupling; and

the second tube portion coupled between the lumbar pad and the coupling.

Claim 4 (Original): The brace of Claim 3, wherein the coupling comprises a hollow fitting force fitted into ends of the first and second tube portions to couple the first tube portion to the second tube portion.

Claim 5 (Original): The brace of Claim 3, wherein the first tube portion integrated within the belt is adapted to be cut to length substantially simultaneously with the belt being cut to length to be positioned about the user's lower torso.

Claim 6 (Original): The brace of Claim 1, further comprising a release valve coupled to the tube, the release valve adapted to release air from the lumbar pad through the tube in response to depression of the valve.

Claim 7 (Canceled)

Claim 8 (Currently Amended): The brace of Claim 1, ~~[[further comprising a]]~~ wherein the backplate is coupled to the belt using a canting mechanism, the canting mechanism adapted to allow the belt to adjust to conform to an underlying structure and natural conical shape of the user's torso generally above the user's hips.

Claim 9 (Original): The brace of Claim 1, wherein the brace is a stabilization brace further comprising:

a second belt configured to be positioned about the user's upper torso; and

one or more supports coupled between the belts, each support comprising:

a housing;

a piston slidably engaged with the housing; and

a motion limiter adjustably coupled to the housing in one of a plurality of predetermined positions, the support operable to limit flexion of the user's spine to a predetermined range according to the position of the motion limiter.

Claim 10 (Original): A brace with an integrated lumbar support system, comprising:

an upper belt adapted to be positioned about a user's upper torso, the upper belt comprising a rigid portion and a resilient portion each extending along at least a portion of a length of the upper belt;

a lower belt adapted to be positioned about the user's lower torso, the lower belt comprising a rigid portion and a resilient portion each extending along a length of the lower belt;

a lumbar pad coupled to the lower belt, the lumbar pad adapted to be positioned proximate the user's lumbar region and to be inflated to provide lumbar support to the user;

a pump coupled to the lower belt, the pump adapted to provide air to the lumbar pad to inflate the lumbar pad;

a tube adapted to transport air between the pump and the lumbar pad to inflate the lumbar pad, the tube comprising:

a hollow fitting coupling a first tube portion and a second tube portion;

the first tube portion coupled between the pump and the coupling, the first tube portion secured between the rigid portion and the resilient portion of the lower belt along substantially the entire length of the lower belt between the pump and the coupling to integrate the first tube portion within the lower belt, an end of the first tube portion being force fitted over a first end of the coupling, the first tube portion adapted to be cut to length substantially simultaneously with the lower belt being cut to length to be positioned about the user's lower torso; and

the second tube portion coupled between the lumbar pad and the coupling, an end of the second tube portion being force fitted over a second end of the coupling.

Claims 11-19 (Withdrawn)

Claim 20 (New): The brace of claim 1, further comprising a locking mechanism for locking the belt into a certain position relative to the backplate, the locking mechanism having a first member rotatably coupled to the backplate, the first member being adapted to receive the belt, and the locking mechanism further having a second member secured to the backplate, whereby the first member is adapted to engage the second member in a locking engagement.

Claim 21 (New): The brace of claim 20, wherein the first member includes a buckle base and a buckle lever hingedly coupled to the buckle base and the second member is a buckle locking disc, the buckle lever being adapted to engage the buckle locking disc in a locking engagement.

Claim 22 (New): The brace of claim 21 wherein the buckle lever and the buckle locking disc each include gear teeth to facilitate a locking engagement between the buckle lever and the buckle locking disc.

Claim 23 (New): The brace of Claim 10, further comprising a release valve coupled to the tube, the release valve adapted to release air from the lumbar pad through the tube in response to depression of the valve.

Claim 24 (New): The brace of Claim 10, further comprising a backplate coupled to the belt and supporting the lumbar pad.

Claim 25 (New): The brace of Claim 24, wherein the backplate is pivotally coupled to the belt to allow rotation of the belt about the backplate.

Claim 26 (New): The brace of Claim 10, further comprising one or more supports coupled between the upper and lower belts, each support comprising:

a housing;

a piston slidably engaged with the housing; and

a motion limiter adjustably coupled to the housing in one of a plurality of predetermined positions, the support operable to limit flexion of the user's spine to a predetermined range according to the position of the motion limiter.